

Abstract of disclosure

The column is provided for carrying out an isotope exchange (EM) between a liquid substance (L) and a gaseous substance (G) using a catalytic reaction (EK). In this reaction the isotope exchange between molecules of the vaporized liquid substance (V) and molecules of the gaseous substance (G) takes place through a heterogeneous catalysis. The column comprises a plurality of modules (M) which are arranged vertically one above the other and which are in each case subdivided into two regions K and A which are serially connected by a connection region (C). The catalytic reaction can be carried out in the region K on a first packing (2). A substance exchange (E1, E2) between a liquid and a gaseous phase which contains vapor can be carried out in the region A by means of a second packing (3) for compensating substance concentrations. During the operation of the column a transport of the gaseous substance (G, V) which contains vapor is driven through the modules as a result of pressure gradients. In this the transport direction is changed at least once in the connection region, and indeed from a downward direction to an upward direction, whereas the liquid substance (L) is forwarded downwardly through the modules through the action of gravity alone.

(Fig. 2)